DOCUMENT RESUME

ED 357 532 EC 302 074

AUTHOR

Reid, Neil

TITLE

Correcting Cultural Myopia: The Discovery and

Nurturance of the Culturally Different Gifted and

Talented in New Zealand.

INSTITUTION

New Zealand Council for Educational Research,

Wellington.

PUB DATE

Jul 92

NOTE

38p.; Paper presented at the Asian Conference on

Giftedness (2nd, Taipei, Taiwan, July 24-27,

1992).

PUB TYPE

Information Analyses (070) -- Viewpoints

(Opinion/Position Papers, Essays, etc.) (120) --

Speeches/Conference Papers (150)

EDRS PRICE

MF01/PC02 Plus Postage.

DESCRIPTORS

*Ability Identification; *Cultural Differences; Cultural Pluralism; Eligibility; Equal Education; Ethnic Groups; Evaluation Methods; Foreign Countries;

*Gifted; *Minority Groups; *Student Evaluation;

Talent; *Talent Identification

IDENTIFIERS

Maori (People), *New Zealand; Pacific Islanders

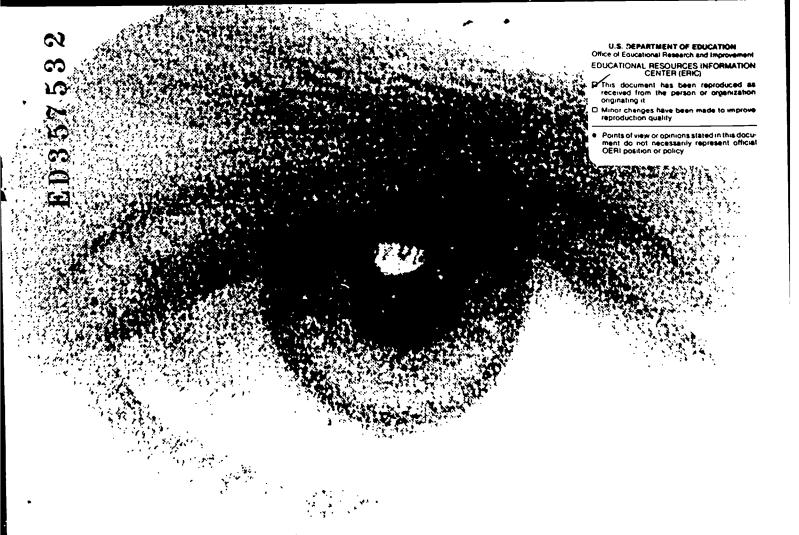
ABSTRACT

This paper addresses the problem of identifying and developing talent in children from culturally different backgrounds in New Zealand. The paper offers examples of how even applying the recommended "best practice" of multi-dimensional identification approaches can be inadequate for identifying gifted children from Mapri, Polynesian, or other cultural minority backgrounds. It reviews the literature to show how gifted minority children from these specific cultures can be underidentified by each of five recommended methods of identification usually included in multidimensional identification methods: (1) teacher identification, (2) educational and psychological assessment, (3) parent nomination, (4) peer nomination, and (5) self-identification. Adaptations, supplements, and, in some cases, replacements of these methods of assessment are recommended. Conceptions of just what "gifted" and "talented" mean are compared for Europeans, Maori, and Pacific Islanders, showing European emphasis on academic/utilitarian giftedness at one end of the scale, Maori emphasis on non-academic humanistic talents at the other end, and Pacific Islanders with values between these extremes. A conclusion notes the universality of talent, differing educational needs, the critical importance of the teacher, and the need to avoid stereotypes. (Contains 77 references.) (DB)

from the original document. is a state to the activation and a state at the activation and activated and activated activated



Reproductions supplied by EDRS are the best that can be made



CORRECTING CULTURAL MYOPIA

The Discovery and Nurturance of the Culturally Different Gifted and Talented in New Zealand

Neil Reid	
New Zealand	Council for Educational Research
Wellington	

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A paper presented at the Second Asian Conference on Giftedness, Taipei, Taiwan, 24–27 July, 1992.



Correcting Cultural Myopia: The Discovery and Nurturance of the Culturally Different Gifted and Talented in New Zealand.

Neil Reid New Zealand Council for Educational Research

Introduction

The subject of my presentation is a formidable one for me as a member of the dominant European (Pakeha¹) ethnic group. Also, it is a topic that I would much rather someone else, preferably a Maori or Pacific Islander or a member of one of another of New Zealand's minorities, had tackled. I have previously drawn attention to our ignorance and insensitivities in this area (Reid and McAlpine, 1981; Reid, 1983, 1989, 1990) and have waited patiently for others to take up the challenge. Until relatively recently, no one has. It has fallen to my lot to attempt at least to delineate the problem, however tentatively, and to identify avenues of enquiry that I think might be pursued profitably.

I am unable to sketch the myriad facets of the problem in any precise detail. Evidence specifically on the aspects of giftedness I want to address, of a trustworthy and verifiable written kind, is meagre. Hence, to remedy the lack, I have resorted to informants from a variety of ethnic backgrounds who have generously provided me with helpful comment and insights and with their perceptions of giftedness and talent. No claims can be made as to the representativeness of the informant sample; they were people known to me who were willing to be interviewed. However, most are Maori or Pacific Islanders and/or are recognized authorities on Maori and/or Pacific Island affairs.

It became patently obvious as my enquiries proceeded that broad generalizations might prove to be misleading and may, in fact, perpetuate myths and stereotypes about these peoples, and more particularly, their views of giftedness and talent - the focus of the enquiry. Yet generalize I must in the space and time available.

What is the problem?

The difficulty of identifying and developing talent in culturally different students is an international problem. It has been stated and re-stated in a variety of contexts and as variations on a theme by a number of educators both overseas (for example, Baldwin, 1987; Frasier, 1987; Sisk, 1988), and in New Zealand (Freeman, 1978; Walford, 1979; Havill, 1982; Reid, 1990; Cathcart and Pou, 1992). And while it is



¹In Maori, white, 'European' New Zealanders are *Pakeha*; in many Pacific Island languages, *Palagi*. These terms will be used interchangeably throughout the paper.

found in all ethnic groups, the fact is that unless focussed efforts are made to both find and nurture minority group youth, employing special rather than traditional approaches, they remain an untapped source of potential intellectual and creative talent.

In New Zealand there are social, political, educational, historical and economic reasons why Polynesian children are under-represented in the ranks of the gifted and talented as currently identified. Some of these will be touched upon later in this paper. But looming large among the barriers to identification in the school context would be the prevailing conception of giftedness; an overly narrow ard outmoded conception emphasizing those traits valued by the dominant culture of monolingual, mainly middle-class Europeans that rejects or ignores other characteristics relevant to and valued by members of minority cultures.

Undeniably, the majority culture does recognize and value certain talents among its Polynesian minorities. The Polynesian's prowess in many athletic activities requiring physical skill, stamina and psychomotor abilities is well known; they are conspicuously over-represented in national sports teams.

Cultural clubs are also a feature of communities with large numbers of Polynesian residents and of multicultural schools. Lately, there has been a vigorous resurgence of interest and participation in the various activities being offered by such clubs with their members' talents frequently on display for tourists and visiting dignitaries. In recent years the annual Polynesian Festival has attracted nation-wide attention for the excellence of the song and dance performances presented by groups from throughout New Zealand and by invited South Pacific neighbours.

Polynesian skills in arts and crafts: wood and bone carving, fine mat and cloth making, for example, are admired and envied. In the visual arts, during the past decade, many Maori artists have been involved in what can only be described as a remarkable renaissance in Maori art. Maori traditions are still strongly evident in the work, but they are being interpreted in new, different and exciting ways using novel materials and non-traditional approaches. The products, however, are unmistakably, Maori.

Belatedly, New Zealanders are recognizing the richness of ancient Maori verse and music. Recent years have also witnessed a burgeoning of talent in the field of poetry, short-story and novel writing by Polynesian authors.

But, by and large, despite what has been outlined above, brown-skinned New Zealanders are usually not considered as potential participants in academically-oriented, school-based 'gifted programmes' or 'programmes for children with special abilities', whereas Asians and some other ethnic and cultural



minority children are probably over-represented. Maori and Pacific Island children are generally not seen as comprising an untapped talent pool by European teachers with an ethnocentric viewpoint. All too often, it appears, cultural difference is viewed as cultural disadvantage; as a weakness rather than as a strength.

Identifying Giftedness and Talent in New Zealand's Ethnic and Cultural Minorities

In the past 10 years or so, there has been a general consensus by all leading educators in the gifted and talented field that employing multi-dimensional indentification approaches is the preferred strategy and constitutes 'best practice'. While not guaranteeing minority students will be identified, it will, they believe, undoubtedly increase the likelihood of success.

In New Zealand, those concerned with the identification and development of gifted and talented children are becoming increasingly aware of the difficulties in using this 'best practice' with ethnic minorities, more particularly with Maori and Pacific Islanders. Let me illustrate some of the inadequacies and difficulties of discovering giftedness among these culturally different groups using the recommended multiple-criteria approach to identification (teachers, tests, parents, peers, self).

Teacher Identification

Teacher identification remains a vital element in any search for minority talent potential, and is dependent on the teacher's understanding, insight and ability to interpret student characteristics and behaviours fairly and appropriately.

In New Zealand, the vast majority of teachers are middleclass, monolingual, monocultural Europeans working in an education system that is predominantly ethnocentric, and which according to Ramsay et al. (1983), Harker (1985), Ennis (1987), and other educationists, is likely to remain so in the foreseeable future despite strenuous efforts by some to effect radical change. These Pakeha teachers are the products of a culture that emphasizes certain knowledge, values, attitudes and codes of behaviour and, quite naturally, they tend to 'see' things from that myopic viewpoint and to evaluate what they see using internalized norms built up through years of experience as members of the mainstream culture. As Joan Metge (1990) reminds us, 'Just because they are in the majority, Pakeha people find it more difficult than most to see their own culture. Whereas members of minority groups have their own ways thrown into relief in the encounters with others, Pakeha people take theirs for granted as the norm' (p.15).



Several studies (Wills, 1981; Bassett, 1983; Hunkin, 1983) have revealed that teachers in training, while not regarding Maori people in general unfavourably, tend to be ethnogentric in their orientation. Benton (1987) states: 'Although teacher training should attempt to enable prospective teachers to become more sensitive to the needs and capabilities of children from cultures and backgrounds different from their own, and more appreciative of these differences, it is not at all clear how this can be accomplished' (p.12).

A number of approaches have been tried over the years but, as Middleton (1982) pointed out, under the arrangements existing in most colleges, the courses specifically designed to sensitize Pakeha New Zealanders to cultural differences and to equip them to teach students with backgrounds markedly different from their own, could be evaded by trainees.

An on-going, longitudinal study of student progress through the colleges of education (Renwick and Vize, 1990, 1991), has revealed in terms of equity issues, of which ethnicity is but one, that while most students claim to have become better informed and more open-minded, there are two exceptions to this general trend. One is for a minority of students in each of the colleges to say their attitudes towards Maoritanga have become more negative because the college has 'come on too strong', making Pakeha students feel that they have to accept the burden of guilt for all Maori grievances. The second is a more common student view that the colleges are more concerned with biculturalism than multiculturalism, an approach which does not necessarily prepare students for work in multicultural classrooms.

And while 80% of students in the study considered themselves to be either 'well' or 'adequately' trained to teach multicultural classes, whether or not this proves to be the case is another matter. As Metge (1990) warns, 'Teachers who have studied [Maori] culture at teachers' college or made a few marae (tribal meeting place) visits commonly over-estimate the extent of their knowledge' (p.57).

John Clarke (1987), principal of Wellington High School, in addressing graduating students at Auckland College of Education, did not mince words when he told them, 'Teachers not willing to cross another cultural boundary won't survive' and that '... the 'in' word has become multiculturalism, but unfor unately this provides an 'out' for action'. A strong advocate of a bicultural approach to counter 'deep-seated prejudices in society', Clarke blasted teachers who were 'stubbornly monocultural in outlook', accusing them of 'security seeking' and paying lip-service towards efforts in obtaining a better educational deal for Maori in the New Zealand education system.

While preservice training for teachers may assist in achieving the worthy aim of sensitizing and enlightening *Pakeha* teachers in matters relating to multicultural education, there remains



the problem of the vast bulk of teachers who are presently in New Zealand schools and who have had no such training. What of them? Alison St. George (1983) has suggested that 'attribution retraining' be provided in an endeavour to get them to use the classroom more effectively in motivating their students, drawing on the positive aspects of ethnic differences. This approach, it is anticipated, would reduce the tendency for many Pakeha teachers to place the blame for lack of academic achievement and application on the children or on their 'deficient' backgrounds (see later discussion). And there is a general consensus that inservice training in this area is hopelessly inadequate; a view shared even by the Ministry of Education (Benton, 1987).

The expectations teachers have of their students appears to have a considerable impact on classroom practice and on the achievements of ethnic minority children, particularly Maori and Pacific Islanders.

Differential expectations (i.e., low) of Maori children's capabilities, from junior primary through to secondary school, amongst teachers have been noted by a number of researchers (Clay, 1985; Kerin, 1986; Benton, 1986; Jones, 1987). Ramsay et al. (1983) concluded that the level of teachers' expectations, both academically and socially, marked the 'successful' school from the less successful in their South Auckland studies.

Many teachers, it appears, subscribe to the outmoded 'deficit' theory of the 60s. Simon (1986) provides damning evidence of more than half of the teachers in her study subscribing to a 'deficit' ideology and a number of them revealing overtly negative views of Maori.

Clearly, if teachers are to recognize talent amongst minority culture students there are some major obstacles to be overcome. There will need to be conscious efforts to suppress culturally-determined prejudices and to consider other 'foreign' or 'alien' ways of thinking, feeling and doing. Too often there is the temptation on the part of dominant-culture members, as has been mentioned earlier, to view difference as deficit, to equate cultural difference with cultural disadvantage. Metge (1990) writes: 'Members of the Pakeha majority are mostly monocultural, familiar with and able to operate in terms of only one culture. They tend to regard cultural diversity as something to be made the best of rather than a positive good' (p.30).

If schools are to become multicultural in the fullest sense, teachers will need to consider differences in positive terms and to regard them, not as disadvantageous, but as highly desirable - as strengths rather than weaknesses - to treat them as important, and with respect. And we are talking about much more than taha Maori (Maori dimension) and Maoritanga (Maoriness) here! There are heavy concentrations of minority group members in some parts of New Zealand and in certain



cities; they must receive recognition also. There are 40 different readily identifiable ethnic/language groups in Wellington city alone! Let us not forget the Chinese, Indian, Dutch, German, Scandinavian, Yugoslav, Polish, Hungarian, Greek, Italian and Lebanese minorities, some of which have been in New Zealand for as long as those of English, Irish, Scottish and Welsh descent.

Frasier (1979) encapsulates the 'message' for teachers when she writes: 'Differences should be celebrated for their contribution to diversity, the very trait that has brought gifted children to our attention. The challenge ... should be to develop potential, not to wish conformity to one model of giftedness with all else being deficient' (p.539).

There is also a need to cease thinking of members of minorities in generally unfavourable stereotypic terms and to promote an openmindness and a tolerance of what are popularly regarded as culturally determined 'inadequacies' or 'incompetencies' (e.g., Maori are lazy and improvident; Pacific Islanders are drunkards and violently aggressive; Chinese are inscrutable and shrewd; Indians are cunning, money-grubbing, and untrustworthy). We desperately need to avoid what Ioane (1982) has termed 'cultural archiebunkerism' amongst New Zealand teachers.

Already in New Zealand we have had to come to terms with Maori, who, not wishing to become 'brown-skinned Pakeha' (Tauroa, 1984), have over almost two centuries, clung tenaciously to their Maoritanga in the face of fierce pressures to assimilate and integrate. More recently, with the flood of Pacific Island immigrants during the 70s and 80s and the beginnings of a steady trickle of people from Southeast Asia, European teachers (and employers and others) have again been reminded forcibly, and often with acute embarrassment, that there are other ways of perceiving and doing things. Belatedly, and with reluctance in some quarters, there has been a recognition of New Zealand as a multicultural society. But, if we are to believe Harker (1985), Benton (1987), Metge (1990), and dozens of other commentators, there is still a long period of adjustment ahead for the nation.

Walford (1979), at the time of writing a teacher in an innercity school with a high proportion of Polynesian children, summarized the position thus:

'The search, ... for the identification of talent among minority group peoples assumes tremendous importance. Aside from the consideration that all children, whatever their culture, have a right to the full development of their potential, their community needs their talents as future leaders to fill the role of the elder. Changing teachers' attitudes will provide a major breakthrough in



this search. We, as teachers, have a moral obligation to treat all children as important human beings, with feelings, attitudes, experiences and interests that are worthy of our attention and respect' (p.3).

Her statement still rings true to me today.

Many teachers, of course, have made such attitudinal changes and do behave in the professional and caring manner that Walford suggests. But, unquestionably, many more need to! It appears highly likely that teachers (and administrators), whose mainstream bias or lack of acceptance of cultural pluralism may interfere with their consideration of the values, beliefs and practices of minority cultures, and hence they may be unable to identify the cognitive and/or creative strengths of the culturally different. If this is the case, then the problem of locating minority gifted children will undoubtedly persist. And, by failing to meet Walford's challenge - by remaining myopically focussed on delivering a strictly monocultural Pakeha education - such teachers will remain part of the problem.

Educational and Psychological Assessment

One of the long-standing and most commonly employed indentification procedures is the use of standardized tests of cognitive ability and educational achievement. Surveys of teachers, both overseas and in New Zealand, reveal with monotonous regularity that when it comes to the crunch, the objective data provided by such measures are considered to be highly effective in identifying gifted students for the typical school-based enrichment and acceleration programmes in subject/curriculum areas. But we also know only too well, that if such measures form the sole basis for identification, the problem of locating minority gifted children will unfortunately increase.

The accusations against tests and charges of misuse and lack of appropriateness in this area are legion. Renzulli's (1973) statement is typical:

'In view of the heavy cultural loading of most standardized tests of intelligence and achievement, it is apparent that an identification process that depends mainly on traditional measures of performance will discriminate against youngsters who have not participated fully in the dominant culture' (p.439).

And Sternberg (1984) reminds us that:

'Tests work for some people some of the time, but they do not work for other people much of the time. Moreover, the people for whom they do not work are often the same again and again. Applied conservatively and with full respect to all of the available information, tests can be of some use. Misapplied or overused, they are worse than nothing...' (p.14).



Similar sentiments are echoed by dozens of other educationists (for example, Davis and Rimm, 1985; Kitano and Kirby, 1986).

In part, what they say undoubtedly has an element of truth. Where there are marked differences between majority and minority cultures, the mainstream's lack of recognition of those abilities peculiar to the minority group will lead to an under-estimation of that group's full intellectual and creative potential. But there is a tendency to overlook or minimize two factors.

First, tests, including tests of general ability and scholastic achievement that are nationally standardized, do not operate in a cultural or social vacuum. Test constructors ensure that their measures reflect accurately the emphases and values of the dominant culture, the mainstream society in which they are designed to function, and thus the formal education system as a facet of that society. Such tests attempt to assess those abilities highly valued by the mainstream culture: in the case of New Zealand (and other 'westernized', developed countries), the abilities required to deal effectively with language, numbers, symbols and abstractions - all deemed to be requisites for success in academic aspects of the New Zealand school curriculum. tests are then unashamedly culturally loaded (not biased) - as they must be if they are to do the job required of them for the majority.

Attempts to circumvent this problem through the development of culture-fair or culture-free tests have been largely unsuccessful. They have failed to yield measures that neutralize the influence of important factors in intellectual growth and most that have been produced are far from free of cultural bias, despite the claims of their authors.

One 'culture-free' test currently in vogue amongst educators in the gifted field in the United States, is Raven's Standard Progressive Matrices, a non-verbal measure which purports 'to assess, as simply and unambiguously as possible, the two components of g (the 'general' factor in intellectual ability) identified by Spearman as eductive ability and reproductive ability' (p.1).

This long-established, well-respected and universally known measure has been standar ized for use in New Zealand (Reid and Gilmore, 1985). But, although far less culturally loaded than verbal tests of scholastic abilities, the analyses reveal that Maori and Pacific Island children score, on average, half a standard deviation below their Pakeha peers.

Second, tests are usually used to assess present functioning. This, after all, is their major purpose. As test users we are interested in what the student knows and can do now, and to predict progress in the immediate future. So, if tests are to be used in identifying intellectual giftedness and talent, we are concerned with present performance and potential (which we



anticipate on the basis of current accomplishments). As with all sensitive test administration and interpretation, we must take into account what is known of the student's circumstances. In the case of minority group students, their opportunities to learn those behaviours incorporated in the tests, and their motivation to perform to the best of their ability on the tasks presented. If for any reason, these assumptions cannot be satisfied for an individual student then the test user must decide whether adminstering a test is warranted. If it is, interpretation of the test result must take account of any known limiting factors.

Nor should it be forgotten that despite generally lower scores on standardized tests and wide-spread examination 'failure' amongst Maori and Pacific Island students, (i) teachers' generally low expectations of students' abilities can be altered by unexpectedly high test scores, and (ii) a great many tertiary-educated Polynesians have been identified and selected for academic advancement by means of competitive examinations, after winning scholarships to such prestigious schools as Te Aute, Queen Victoria, St Stephens, and Hato Petera, or to city boarding schools.

Apart from the more sensitive and searching interpretation of test scores, or possibly the use of separate norms for minority ethnic groups (which is probably political dynamite), we have the alternative of resorting to non-test methods, such as checklists, observational schedules, inventories, rating scales and the like, in an endeavour to include the gifted from among culturally different groups in our gifted programmes. There are disadvantages here, too. Such methods are more time-consuming and they do not have the same degree of objectivity as psychological and educational tests. Nor do they usually have demonstrated validity and reliability. However, there are some promising procedures that have been developed.

Several useful checklists which take account of minority culture values have been devised both overseas and in New Zealand in recent years (Mitchell, 1988; Findlay, 1991; Braggett, 1992). If used sensitively, together with more traditional measures, they should enhance the chances of accurately identifying gifted minority students.

Currently, a series of rating scales for identification purposes, similar in conception to those of Renzulli and Hartman (1971), Eby (1984), and Baldwin (1984), are being developed in New Zealand (McAlpine and Reid, 1988). It is anticipated these will be more culturally relevant for minority students.

But, as has been pointed out in previous papers (Reid, 1983, 1989, 1990), we are not considering an 'either-or' situation. There is no good reason why such measures cannot be used most effectively as supplements or complements to aptitude and



achievement tests in appropriate and/or special circumstances involving the screening of minority students for gifted programmes.

Parent Nomination

Maori and Pacific Island parents, when judged by European, suburban, middle-class terms, are frequently considered to adopt less-than-adequate child-rearing practices in matters of health care, attention and supervision. Mention is often made of parental indulgence in babyhood, the rejection and alienation of children as the family grows and the capricious and often sharp punishment practices employed by Polynesian parents (Foliaki, 1992).

It has also been noted that less well educated, working-class Maori parents are wary of the school (and what it stands for in their experience and judgement), and suspicious of teachers. Some have had little secondary schooling themselves (many have no formal qualifications and some drop out of school or leave as soon as they reach the legal leaving age) and consequently are in no position to guide and help their children at high school. Many teachers feel that Maori and Pacific Island parents lack involvement and interest in their children's education. They cite non-attendance at school functions, such as 'meet-the-teacher' evenings, PTA meetings and the like, and the lack of representation of minority ethnic groups on Boards of Trustees because they do not put up candidates for election.

It is probably more likely, however, that apathy or disinterest are not the reasons behind these situations. Lack of confidence in alien circumstances, a feeling of self-consciousness about their poor command of English, a belief that their educational duties as parents cease once their children have entered the formal education system, and for purely practical reasons, such as both parents having jobs and the pressure of work and trying to make ends meet, leaves them little time to help their children or to take on additional responsibilities.

Regardless of the reasons for not approaching or being closely involved with the school, or for the lack of communication between teachers and parents, and other cross-cultural misunderstandings, the result is the same - Maori and Pacific Island parents are rarely going to be in a position to nominate their children for possible inclusion in gifted programmes or to provide pertinent information that might help a teacher decide.

It is claimed that Maori parents neither place sufficient value on education nor appreciate the object of advanced learning. There is generally an absence of any kind of academic tradition in most Maori families and the attitude towards education could best be described as ambivalent. Although acknowledging the necessity for secondary education



(for vocational purposes and to improve life chances), Maori parents appear to provide little active support for high-level academic performance. They adopt a permissive, laissez-faire attitude and so do not insist on diligent study, the completion of homework and regular attendance at school.

There is also the suggestion made in some quarters that Maori parents are wary of education, of having 'Pakeha educated' sons and daughters. As Kawharu (1965) noted, Maori parents tend not to respond positively to what is learned at school. While in some ways proud of their children's success in the Pakeha system, they are afraid that education will take them away, making them consider their origins as 'inferior', their uneducated parents an embarrassment and most of all, that they might lose their Maoriness - forget their Maoritanga. With little or no experience of the advantages of higher education to allay these fears, parents capitulate to restless adolescents who want to 'wag' school, skip homework and join their age mates in the 'real' world. Several of my younger Maori informants mentioned such pressures and some Maori graduates recount similar experiences.

From the individual's point of view, access to two (or more) cultures provides both opportunity and dilemma. Many Maori university and college of education graduates tell of the alienation and 'stand-offish' behaviour of their friends and relations on returning to their tribal marae after time away in the cities. 'Api', a graduate subject in Fitzgerald's (1977) investigation says: '... with Maori ... I think you tend to lose something. Certainly you acquire an elevated status with some of them, but in the main you tend to push yourself too far above them. The conflict in values is evident' (p.125).

This attitude lingers today, it seems, especially amongst kaumatua (elders) where there is a distinct distrust of 'book learning' and the university educated. Vasil (1988) quotes one of his Maori informants as saying:

'Today, as in the past, most of our prominent Maori people who have had a university education and are known as intellectuals are becoming turncoats to their Maori people' (p.15).

It is known that in pre-contact times the Maori village nuclear ismily lived in a domestic situation which included a number of kin. With rapid acculturation and an accelerated drift to the major urban centres the pattern of three generations plus visiting kin sharing one home has been disrupted. Many families or family members now live away from their tribal homelands. City houses are frequently too small to accommodate grandparents, foster children, aunts and uncles and cousins, and visiting relations, although the effort is often made to extend customary hospitality, leading frequently to overcrowding and sub-standard living conditions in what are rapidly becoming depressed inner-city and suburban ghettos.



As a consequence of these circumstances, in terms of learning, some of the adult models the child would have been exposed to previously are absent. The opportunities to inculcate those behaviours valued by Maori, such as sharing, respect for elders and getting along with people, occur less frequently. In the past, grandparents frequently identified precocity, aptitude and superior ability in growing children and nurtured budding talent. For example, a young Maori woman activist says: 'I was trained as a leader by my grandmother. usually one or two in each whanau (extended family) that are designated for leadership from birth really ... I was always very bright and outspoken and was always taken everywhere. was preened for leadership from birth ... ' (Evening Post, 18 May, 1983). The model of the more tight-knit, middle-class, suburban family is being forced on both Maori and Pacific Islanders by societal pressures and economic circumstances: urban living is slowly breaking down the traditional living and child-rearing patterns typical of the rural communities in which they lived previously.

The typical Maori home, again judged by middle-class European standards, lacks books, pictures, printed resource and reference materials. Hence, the environment is evaluated as being unstimulating and barren in terms of those experiences that underlie scholastic achievement, and communication between parents and children is judged to be limited. To be fair, probably much the same may be said of the homes of low SES or rural working-class European families in New Zealand. And, of course, it is extraordinarily difficult to disentangle the cultural and social factors in examining home circumstances, as many researchers have indicated.

But what is generally unrecognized by Europeans is that Maori children are exposed to aural and visual stimulation of kinds not acknowledged by those brought up in a culture that stresses the written word. In the past, sympathetic teachers like Ashton-Warner (1963) and Richardson (1964) have demonstrated that Maori children from supposedly deprived backgrounds can produce superbly imaginative work.

Maori academics, such as Ranginui Walker (1990), also dispute such claims of 'deprivation'. He writes: 'According to the 'deficit' theories of Reissman and others, Maori were underachieving because they were 'culturally deprived'. Because Maori families were impoverished, their houses thought to be less stimulating than those of their Pakeha counterparts... children from working-class homes spoke a 'restricted language' code which stopped them from succeeding at school. These 'deficit' theories appeared to validate the conventional wisdom that Maori failure was due to poor English and lack of family support' (p.98).

Generally, there appears to be conflict between home and school standards, and Maori children often seem to lead two discrete lives, one at school, the other at home. As Metge (1976) points out: 'At school many Maori children find that



what they have already learnt in home and community is either unaccepted, misinterpreted or unrecognized, while they are expected to have mastered quite different skills...' (p.156-157).

Benton (1987) is equally critical of what happens to Maori children when they first encounter the Pakeha-dominated school system. He says, 'Maori children at present often cannot invest their cultural capital because it is in a currency rejected by the school, often from the moment they first walk through the door. Expectations, which seem more important than pedagogy, are often lowered by teachers, pupils, and parents alike, making Maori failure the rule rather than the exception, and acceptable as part of the natural order of things' (p.35).

But how can such children be regarded as 'deficient' or 'disadvantaged' in the strict sense of the term? Clearly, they possess a comprehensive array of behaviours, skills and competencies which enable them to function perfectly adequately in the cultural context in which they are growing up. But, of course, their accomplishments are somewhat different from those of middle-class European children. Again, it seems, cultural difference is viewed as disadvantage by dominant culture members who reject or ignore - or simply fail to see - characteristics relevant to and valued by mincrity cultures.

It is common knowledge that in recent years there have been significant changes taking place that may render such observations as those cited above obsolete. With the advent of Kohanga Reo (language nests) and the Pacific Islands language nests modelled on them (Foliaki, 1992), and the establishment of Kura Kaupapa Maori (Maori language only schools), parents have been drawn into the education process to a much greater degree than ever before. Preliminary evaluations of these initiatives indicate that parental interest and involvement is high. Whether or not it will be sustained through the Polynesian child's school years remains to be seen.

Obviously, this view of Maori parents is over-generalized, overly pessimistic and possibly misleading, and not all educators and social scientists would subscribe to it. The actual situation, I would venture, is unknown presently but there are some disturbing statistics that have been emerging recently. The Evening Post of 13 May reported that nearly half of all Maori families may now be sole parent and that more than 75% of these parents had no school qualifications.

The director of the survey went on to state 'Maori sole parents stood out as a large, disadvantaged group within the sole parent population. They were disadvantaged in income, housing, education, occupation and employment, compared with European sole parents'. Such a dismal picture and the problems it portends, provides a quite different view when



compared with earlier descriptions of the Maori family and the role of parents (and grandparents) in the day-to-day business of raising a family provided by such researchers as Ritchie (1963), Schwimmer (1964) and Watson (1967).

In sharp contrast to the alleged ambivalence as to the worth of education and the lack of support given to teachers by Maori parents, it is known that Pacific Island parents place high value on a good education for their children. Indeed, the prime motive for migration from their island homes to New Zealand was to avail themselves of educational opportunities. They have great expectations of the school system, perhaps unrealistically high expectations. To educate oneself is seen as some kind of moral duty by many Pacific Island parents (Foliaki, 1992).

However, this valuing of schooling does not mean that Pacific Island parents are willing collaborators in the process (Ivala-Laufiso, 1992). The reasons for their apparent apathy and non-communication have been suggested previously. But, it would be true to say that no scheme for identifying and educating gifted Pacific Island students stands any chance of success unless it accords with the way Polynesian parents consider their children should be treated at school. And in this we have potential for conflict.

Pacific Island parents, it is believed, want a good, academically orientated Palagi education for their children and consider it arrogant for any Palagi teacher to tell them differently. Unless the parents accept that the school is operating 'along the right lines' (and they have very definite ideas about what these are) they will not give any scheme, such as a programme for gifted students, their blessing. And the students themselves, through loyalty to the community's adults, will not cooperate with the teachers. 'Giftedness' for Pacific Island parents would have to be compatible with the cultural values of the community. And 'giftedness' as a state or trait that sets one apart from the community is unlikely to be valued highly.

Peer Nomination

Compared with the vast majority of European children, Maori youngsters are strikingly independent at an early age. And the lack of contact with adults results in information and guidance about adult values, roles and expectations being learned from older children. Since adults rarely interfere in their games, fights, and other activities, the behaviour patterns are determined by the children's own standards. Typically, however, children who show any special gifts and who attract attention through leadership ability or marked independence are criticised, ridiculed and alienated by their peers until they conform.



A somewhat similar set of dynamics is to be found in Pacific Island children's group behaviour. Peer group loyalties are strong and there is little vying for overt leadership; the structure is essentially informal. There is solid conformity to group standards. Independence is little valued; group cooperation and cohesion are considered vastly more important. It is also noteworthy that these groups are usually composed of Samoans, or Tongans, or Tokelauans or Cook Islanders only, and there is a good deal of antipathy to both Europeans and other Polynesians.

Bound up with Maori group behaviour are two concepts embodied in the words whakaiti and whakahihi. Roughly translated whakaiti means being humble, denigrating yourself, putting yourself down. As Metge (1986) explains: 'From the Pakeha point of view whakaiti is disadvantageous when it causes the able to play down their ability in this way. To Maori it is a praiseworthy preference for fellowship over individual eminence' (p.86). Maori children, in fact, will disquise their ability so that they stay with, rather than rise above their peer group. And whakaiti is seen as a desirable quality in leaders - indicative of real greatness. Humility is a valued attribute in Maoridom.

The second, whakahihi, is the opposite: boasting, making yourself out to be somebody, skiting. Again, Metge (1986) informs us that one of the most damning criticisms one Maori can make of another is to accuse him/her of being whakahihi. Parents are especially afraid of their children being labelled so. And to ensure that their children do not attract the whakahihi label, Maori parents tend to squash any signs of childish pride and to withhold praise. However, while it is not appropriate for parents to praise their offspring, under favourable conditions this situation is compensated for by relatives and other members of the whanau - encouragement and support comes from them.

The whakaiti - whakahihi opposition is very strong - much more potent than for Pakeha - and has greater significance for Maori. As the Mitchells (1988) discovered in their studies, the pressures can be intolerable. They found that some high-achieving Maori students had to abandon their friends if they wished to succeed academically, while others succumbed to peer pressure. Some students begged to be taken out of top-stream classes, others deliberately failed tests, and some children begged their teachers to deduct marks from their assignments and tests so that they would not appear to have done so well!

Hence, peers make every effort not to draw attention to themselves or to stand above the common herd. In fact, status is derived from conformity rather than divergence in the group situation.

Quite clearly, the expectation of teachers that Maori or Pacific Island peers will identify group members as gifted or talented, a procedure that would set individuals apart from



the rest as 'better' or 'different', is antithetical to prevailing peer values and codes of conduct. There is, then, little likelihood of such an identification strategy being effective or productive.

Self-Identification

Considerable attention has been focussed in recent years on students identifying themselves as participants in gifted programmes through knowledge of, or belief in, their own abilities and/or intense interest in what is being offered in a programme, and/or high levels of instrinsic motivation. Renzulli's revolving door strategy for example, relies very heavily on this kind of identification - students are able to opt into the programme on the basis of self-nomination. But can we expect Maori and Pacific Island students to come forward and identify themselves in this fashion? I believe not.

Mitigating against such an identification strategy is a complex and little understood phenomenon called whakama in Maori. The Samoan equivalent is musu, although musu is a rather extreme form. Similar concepts are to be found throughout the South Pacific, generally termed, ma.

When confronted with unfamiliar situations, or authoritarian figures (such as school principals or business-suited officials), or when they find themselves outside the range of ordinary events, Maori children or youth may be emotionally immobilized by whakama (roughly translated: shame, embarrassment, strangeness, alienation). The emotion can be so intense that they may have difficulty in expressing much of what they feel, much less the reasons for it. Their capacity for achievement and mixing with others, particularly strangers, is stultified. Some investigators, for example Ritchie (1963), have considered whakama a more significant potential difficulty than Pakeha prejudice in providing for Maori fulfilment, and much less easy to eliminate or reduce.

Most of my young Maori informants could cite examples where they had been so afflicted. Most commonly they gave accounts of being singled out as the only Maori, say, as a member of a representative sporting team. Through their own skills and abilities they had earned selection, but the strangeness of being 'the only Maori' and the isolation from peers of their own ethnic group, resulted in withdrawal. In psychological terms, it could be said they suffered a failure in confidence, suddenly doubting themselves and their capacity to achieve. But, interestingly, all my young informants, although acknowledging whakama as a powerful phenomenon, thought it less potent than the research psychologists. And for Maori born and raised in a city environment, remote from their turangawaewae (home marae), a less common experience than for



their rural cousins. Nonetheless, many Maori become whakama when they are singled out, separated from their peers and placed in a 'special' category be it superior, inferior, or just different.

In the school context whakama may be triggered by a sense of shame, for example, for not being able to speak Maori well or at all, or by feelings of injustice or guilt. But other examples, cited in Metge (1986), may involve such instances as being called upon to give a morning talk or to read orally, or to recite a poem - all commonplace activities in ordinary New Zealand classrooms.

While whakama causes most Maori to withdraw, some individuals treat it as a challenge and strive to regain mana (prestige) by achieving well. Being put down or being made to feel inferior stimulates determination in some; there is a positive outcome. Metge (1986) believes that the difference between profiting from whakama and being disabled by it are probably due to 'security of identity, upbringing and personality... and a background providing encouragement and support' (p.117).

Musu is similar to whakama. People afflicted by musu become withdrawn; they have a 'dead pan', vacant look and restrict answers to questions to monosyllables. European teachers with little training in handling multicultural classes are baffled by such behaviour, and frequently misinterpret these actions as sulkiness, insolence, or rejection of authority. Lack of response may infuriate such teachers, but hectoring the child or youth will only aggravate the situation.

As a further complication to accurate identification, Maori children are reported, in the terminology of the social psychologist, to have a low self-concept. It is alleged that they see themselves as different and inferior in many ways. Ranginui Walker, some years ago wrote, 'The Maori child knows that his membership group is a coloured minority that is in a subordiante relationship to the dominant Pakeha majority. tends to be socialised in many ways that distinguish him from the Pakeha ... he is acutely aware of the difference in material wealth between Maori and Pakeha. These differences in wealth, he reasons, come about because the Pakeha is higher than the Maori, and holds positions of power over him. for the child, his minority-group status is seen as conferring on him a position of social inferiority to the Pakeha' (p.114, 1973). He views the loss of pride, low self-esteem (expressed in being whakama), and poor self-image, as probably the greatest disadvantage that the Maori child suffers in competition with the Pakeha.

Research lends support to Walker's contention. Ranby (1979) found that Maori students on average, had a lower self-concept than that of comparable non-Maori pupils. They certainly did not think of themselves as 'clever'. Their mean scores on the self-esteem rating scale for this category was lowest and well below the *Pakeha* mean.



In recent years concerted efforts have been made in New Zealand schools to boost Maori children's confidence, self-esteem and academic standing by introducing taha Maori and Maoritanga. However, the results of Ranby's research indicated that 'teaching' Maoritanga in isolation, 'helps self-concept and academic success hardly at all' (p.2). Such a finding is not surprising to some who would claim that Maoritanga cannot be taught - it is something that is lived.

More recently most other writers have reiterated Ranby's view (Leadley, 1982; Simon, 1986; Ennis, 1987; Metge, 1990), although Chapman (1984), who reanalysed Ranby's data, is more conservative in his interpretations. And despite the efforts of caring, dedicated and thoughtful teachers and the exhortations by officers of the former Department of Education (Renwick, 1984), there is much disquiet in Maoridom about the introduction of these 'new' developments.

Criticism has been levelled at both the concept and the development of taha Maori by such Maori educators as Penetito (1984), Walker (1985) and Smith (1986, 1990). Smith (1990) states uncompromisingly, 'The introduction of taha Maori into schools relates to the interests of the dominant Pakeha population, in particular to the preservation of Pakeha social, cultural, economic and political privilege ... taha Maori has become 'co-opted' into being more concerned with educating Pakeha pupils' (p.188). In other words, we have the familiar scenario of middle-class Pakeha capture of innovation to strengthen further the stranglehold of the dominant culture on the education system.

What has been said about Maoritanga and taha Maori also applies equally to the rather self-conscious attempts to introduce Pacific Island elements into the school's activities. Ioane (1982), writing of the cultural club activities of some Auckland schools, says: '... there are certain undercurrents of scepticism and quiet resentment of all this by Polynesian parents, who see clearly through the thin undercoat of a few ethnic items of entertainment, the quixotic attempt at multiculturalism, for the real spirit and practices in such schools are still fashioned on the monocultural beliefs of the past' (p.13).

And, of course, for most, if not all, other minority cultures - the Chinese, indian, Dutch, Yugoslav, and so on - no effort is made in school contexts to recognize their existence or validity - not even symbolically!

Yet despite the lack of recognition, and with minimal encouragement and support from dominant culture members and education (and other) authorities, individual members of minority non-Polynesian cultures, especially Chinese, Indian and Southeast Asian minorities, appear to be exceptionally successful in New Zealand's school system, and in its society generally. They are represented out of all proportion in scholarship lists, as school and community leaders, in



professions and thriving small businesses, and in certain of the arts, e.g., music and graphic arts. Over a lengthy period they have managed to keep important aspects of their cultures vibrantly alive, especially language, customs and religion, while apparently integrating and assimilating in the mainstream in less important ways.

A few determined teachers, however, have demonstrated that gifted young Maori may be developed through Maori studies. Greer Doidge (1990) describes such a programme based on Maori values and customs operating at Manurewa Intermediate School. Identification for the programme is as follows: 'In terms of recognition, it may seem foolish to state, but I truly believe that most teachers feel that a Maori child is gifted rather than perceive it through such indicators as the results of ... tests. Such results may indicate academic giftedness, while [in this article] I am addressing the concept of cultural and spiritual giftedness' (p.36), and, '... I find a presence among peers a good starting point in identifying those children who are latently gifted' (p.36).

While considering her approach to nurturing gifted young Maori a qualified success, Doidge offers the following suggestions for those who might choose to try similar strategies: 'In developing a programme based on Maori values and customs, and in which Maori children may excel on their own terms, adjustments to the principles and objectives of the school as a whole may be needed. In simple terms, space and time must be made for such activities which enter school in addition to the present curriculum. Some attitudes in teachers and parents may need to be modified in order for giftedness in Maori children to flourish. Goodwill and understanding are needed' (p.39).

Doidge does not suggest it, but the logical extension of her approach and a reasonable expectation, might be that New Zealand's gifted Maori youngsters would be best nurtured in Kura Kaupapa Maori. In present circumstances, however, this option is largely unavailable.

Obviously, in the light of the foregoing discussion, any identification and selection procedures which are going to make children feel 'different', or that single them out as being in some way 'superior' or 'better' in comparison with their peers, or that may result in them heing withdrawn and isolated for some period of the school day by well-meaning teachers for accelerated and/or enriched instruction, will have little appeal for Polynesian students. They are highly unlikely to volunteer for inclusion in such programmes, should they ever consider themselves as suitable candidates, which is doubtful given our knowledge about their poor self-image in academic terms. Inevitably, such procedures will be seen as threatening and something to be avoided at all costs.



With so many obstacles and significant factors inhibiting the use of the westernized, overseas-devised 'best practices' to identifying minority gifted and talented students in the New Zealand education system, what approaches might be adopted to improve our success rate?

First, it is not necessary to abandon all the 'traditional' approaches we have been using, although others (Cathcart and Pou, 1992) are of the opinion that they have 'failed abysmally'. But, unquestionably, adaptations, supplements, and in some instances replacements, will need to be provided. What are these?

Teacher Identification

- * Be prepared to remove the blinkers and to look hard at what minority cultures might have to offer. Perhaps we might incorporate some of their strengths might be incorporated to enrich mainstream-culture teacher practices.
- * Undertake a rigorous and searching self-evaluation of attitudes and beliefs that might be obstructing or distorting the view in the search for minority culture talent.
- * Make a determined effort to see cultural differences, not as disadvantageous or as limitations, but as positives.

Educational and Psychological Assessment

- * Use valid (which in terms of content validity usually means New Zealand-produced), reputable tests sensitively with ethnic/cultural minorities.
- * Treat test scores and other indices as lower bounds; consider that the student has achieved at least this well.
- * Interpret all test scores and other indices in the light of knowledge of the individual child's circumstances.
- * Supplement tests with non-test measures (checklists, observational schedules, rating scales, and inventories), again selected for their relevance and demonstrated reliability and usability.
- * Use keen, preferably structured observation, both inside and outside the classroom, on every possible occasion. This type of 'action' information is invaluable and cannot be provided in any other way.

Parent Nomination

* Ultra-sensitive and tactful eliciting of information both from parents and kin about child's interests, hobbies, achievements, etc., whenever the occasion arises.



Peer Nomination

- * Endeavour to identify those who have a presence amongst peers using regular observation. Be aware of non-verbal clues.
- * Encourage students to talk about the strengths of others but sensitively.

Self-Identification

- * Try to create a supportive and encouraging classroom climate where minority students can 'surface' and reveal their hidden gifts and talents.
- * Enlist the help of minority children in teaching others about their culture at the appropriate time but with sensitivity and due regard for the individual's feelings and for cultural appropriateness.

If dominant culture (Pakeha) teachers are to do a far better job of identifying and nurturing our ethnic and cultural minority gifted and talented children we need new perspectives. And to acquire these there are a number of crucial differences that must be recognized, accepted, and then acted or capitalized upon.

Conceptions of Gifted and Talent

Fundamentally, are those with differing cultural backgrounds considering exactly the same 'thing' in any discussion about giftedness? It seems not.

On the basis of research undertaken some years ago (Reid, 1983; 1989), when I first suspected that *Pakeha* and Maori/Pacific Islanders did not necessarily conceive of giftedness and talent in the same way, there is convincing evidence that conceptions differ, and on some dimensions, quite markedly. And if we fail to recognize this fact and to consider the obvious differences which on examination are so apparent, the search for gifted minority children in our multicultural classrooms is unlikely to meet with any greater success than it does presently.

With due recognition of the over-generalizations being made in attempting to summarize the research, the following descriptions are probably close to current conceptions.

Pakeha/European Conceptions

Undoubtedly, while our present largely middle-class Pakeha society values intelligence, and to a lesser extent creativity, current economic developments in New Zealand have led us to focus on very specific gifts or talents. Individuals with exceptional talents, especially abilities which can be utilized in the service of technological progress and economic advancement - computer know-how, export marketing, business wheeling-and-dealing both nationally and



internationally, marine and agricultural sciences, macroeconomics - are highly prized by the dominant culture.

Although we have perhaps broadened our conception of giftedness in recent times, and are now contemplating the vast variety of human talents, there remains a tendency to limit ourselves rather severely to what is valuable in utilitarian terms, except, of course, in our recognition of sporting prowess. Certainly, white, middle-class New Zealand society does not regard all talents as of equal worth. Today, those talents associated with technology are most valued and our conception of them tends to include the utilitarian, the useful and the marketable; the talents of doing or performing in a strictly functional way. While this view of giftedness and talent is perhaps understandable in our economically troubled times, it is lamentable that we do not spend as much time seeking out and nurturing our potential poets, writers, social and political leaders, and artists. Some of this same narrow focus is also evident in our schools with the promotion of mathematics, science, and technology as premier, firstorder subjects, eclipsing completely the 'softer' options of history, foreign languages (other than Japanese!), music and

All things considered, unquestionably the prevailing *Pakeha* conception of giftedness is firmly at the utilitarian/academic end of the scale.

Maori Conceptions

I would be equally certain about my placement of the Maori conception of giftedness near the other extreme. The evidence from the literature, research and collected opinion suggests that Maori, while not denigrating the intellectual and the academic, place much less value on such traits. The kind of 'cleverness' esteemed by Maori is epitomized in the speechmaking and oratory on the marae and in the lobbying and politicking on tribal councils.

Instead, prized characteristics are much more people-oriented, to do with inter-pesonal relationships. The warmth, security and support of, and for, the community which is closely bound by ties of common descent, aroha (compassion, love), and shared activities, are all-important. Some years ago, Getzels (1973) was drawing our attention to 'life talents' - talents not so much for doing something, but rather of being something. In considering Maori conceptions of talent, there are obvious similarities in the Maori concern for cultural identity, of being of service to others, of coping with dignity and a certain style, more especially in times of crisis: birth, marriage and death.



Ki mai kiau, he aha te mea nui o te ao? He tangata! He tangata! He tangata! If you ask me, what is the most important thing in the world, I shall answer, emphatically, a human being!

These last two lines of a Maori poem state rather neatly what I am trying to convey in the paragraphs above.

There is also a spiritual dimension which is largely ignored by Europeans when giftedness is being considered. For example, Maori informants will cite such personal 'gifts' as huarahi-a-wairua (astral travel), miri mauriora (healing through touch), matakite (foretelling) and makutu (sorcery), a 'darker' talent.

Maori attitudes, beliefs and values about so many things pertinent to giftedness diverge from those held by the European. Not that the Maori does not see worth in some Pakeha ways, but 'Maoriness' and the spirituality and meaning of Maoritanga cannot be conveyed adequately in print - it is foolish to try.

Pacific Islander Conceptions

Somewhere between the two extremes of the scale lie the Pacific Islanders, the 'newest' New Zealanders. Torn between integration, which is seen by many as a means by which a minority group achieves success in the host society and a desire to maintain their separate, distinctive cultural identities, their dilemma is distressing. Generally, these Polynesian immigrants have coped with the problems of culture shock and adjustment to a new way of life chiefly through their own social resources, reflecting to some degree the strength of the social institutions that the migrants brought with them. Their adjustment to life in the major cities and to work in an industrialized society is nothing short of amazing, given their predominantly small island village and agricultural background.

Regrettably, in contrast to the revival of Maori cultural identity, many of the Pacific Island immigrants appear to be willing to submerge their own rich cultures in order to assimilate and to benefit from what they perceive to be the material fruits of the Pakeha culture. The changes are being undertaken consciously, if sorrowfully. One of my informants, speaking of her university-trained engineer son, said: 'He is Palagi educated, but he still thinks and feels Samoan. Sadly, that is not true of some of my younger children'.

To balance this conscious cultural integration, some Pacific Island families save money for trips back to their home villages in an effort to maintain kinship ties and to rekindle feelings of belonging. Whether this irregular contact with their roots will have the desired effect remains to be seen, but presently for young Pacific Islanders especially, adult role models in New Zealand society are lacking, particularly



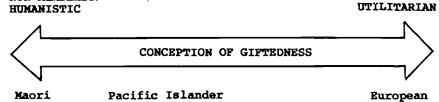
in positions of leadership. Even the church, such an important institution in the lives of most Pacific Islanders, appears to be less vital for the urban youth. Increasingly, it appears that Pacific Island children are rejecting their own culture and their adoptive culture and thus find themselves in a 'no-mans land' in terms of cultural competence. Sefulu Ioane (1982), himself a Samoan, states: 'There are already more than enough young [Islanders] in our streets today whose values are neither Pakeha nor Polynesian' (p.16).

There is support for Ioane's view from Gadd (1981) and Spoonley (1982) who suggest that people of Maori and Pacific Island descent have become culturally alienated from their own backgrounds and have formed a 'third culture' with its own norms and patterns of behaviour.

It is perhaps yet too early to say where their New Zealand experience will lead Pacific Islanders in terms of their notions of giftedness, and whether many of the attitudes, beliefs and valued traits and characteristics similar or identical to those in Maoridom will be lost. Already, as mentioned above, there are signs of some of the old ways boing abandoned or modified under the impact of pressurized city living. It is to be hoped fervently that such changes do not occur on a large scale. If they do, I believe New Zealand will be the poorer for it.

To summarize, if Pakeha, Maori and Pacific Islanders' conceptions of giftedness were placed on a continuum, they would appear as:

NON-ACADEMIC/



If conceptions of giftedness differ, might it be that aspects of the education system, such as what should be taught (curriculum), how it should be taught (teaching methods) and how it is to be learned (learning styles), all directly relevant to nurturing the gifted minority group child (once identified in the school context), might also be viewed differently by ethnic and/or cultural minorities?

There appears to be widespread recognition by both researchers (Harker, 1980, 1981; Ramsay, 1987) and commentators (Walker, 1973, 1985; Renwick, 1984; Ennis, 1987) that the New Zealand curriculum has been '... based squarely within one cultural tradition, that of the Pakeha, and on theories and practices imported from other western countries ... its stress is on the objectification of knowledge and individual competitiveness in its pursuit' (Metge, 1990, p.33). But, with the release of a brand new national curriculum imminent, this may not be true of the future. Nonetheless, it will take time to change what



is being taught in New Zealand schools; it will not happen over night. Nor will it change if the majority of teachers, in their minds and hearts, are unconvinced that change is necessary. Just suppose, however, that we do wish to consider incorporating other cultures' views and values in our curricula. What are some of the actions that might be taken?

One of the first lessons learned might be that many other cultures organize bodies of knowledge differently from Pakeha. Instead of compartmentalizing knowlege into subject areas, Maori and other Polynesian cultures, for example stress the wholeness and interconnectedness of life and knowledge. The fragmentation of the field of knowledge by specialization and chopping it up into digestible bits by topics and modules and by timetabling is totally alien to people of these cultures.

Another is accepting the fact that the cultures of minority groups are part of New Zealand's cultural heritage and their knowledge, beliefs, values, and insights are as valuable as those of the dominant culture. All ethnic groups in this country should, as Metge (1990) states '... be recognized and valued for their own sake and for their past, present, and potential contributions to our national society and culture' (p.33).

It might also be anticipated that the new national curriculum will be flexible enough to allow for a maximum of local input and adaptation. In this it is to be hoped that the school system would accept its role in retaining, preserving and fostering Maori language and culture, in the first instance, and those of other minority cultures, as appropriate depending on locality and community composition. Such initiatives may make education in New Zealand schools 'worth participating in (rather than merely enduring)' (Benton, 1987), particularly for Maori and Pacific Island students.

If such curriculum reforms were to eventuate, might not the gifted minority ethnic/cultural student stand a far better chance of reaching his/her potential?

Some years ago, a few perceptive teachers and researchers began to recognize the mismatch between prevailing teaching methods and the learning styles that many minority group children had developed in their own cultural environment. Mention has been made earlier of pioneer educators in this field, Sylvia Ashton-Warner, (1963) and Elwyn Richardson (1964) but a more concerted approach, especially in the Auckland area, led to the recognition that (i) cooperative learning, with the subordination of the individual to group achievement, are more appropriate for Maori and Pacific Island students, (ii) memorizing and rote learning are valued and culturally appropriate methods, and (iii) non-standard codes are not inferior to standard English.



Metge's (1990) description of the kind of learning that is emphasized in Kohanga Reo and bilingual schools illustrates the points of difference from the typical New Zealand school which is characterized by a concentration on the school and classroom as the venue for learning, the emphasis is on talking and learning about things indirectly and in the abstract, the stress is on individual achievement and competition which promotes a 'winners' and 'losers' mentality, and where the personal contact between teachers and learners reduces as the student moves through the system.

Metge (1990) writes: 'Maori kaiako (Maori language instructors) give a central place to fostering of language. [In teaching] language skills ... emphasis is put on direct communication, especially (but not exclusively) in oral interaction ...' (p.62). Listening as well as speaking skills are encouraged. Whakarongo (active listening leading to understanding and response) is one of the first words a child learns in a Maori language environment.

Kaiako also actively promote the association of intellectual activities with things that have a physical dimension. 'Factual information, stories, and values are expressed, not only in speech and writing, but also in song-poems, actionsongs, enactments, painting, carving and weaving. Music, dance, and the visual arts are moved from the fringe of the curriculum into the core' (Metge, 1990, p.62).

Memorization is used as a learning method far more than is found in the typical preschool or junior school, and cooperation and sharing are stressed heavily. Metge (1990) states: '... individuals take turns as leader and do their own thing from time to time, emerging from and then returning to the group while the less proficient build up expertise and confidence as group members. Individuals are singled out publicly as little as possible, praise or blame being directed at the group or bestowed privately and often non-verbally. Even when doing their own work, children are encouraged to work together and help each other' (p.62).

Such teaching programmes in Kohanga Reo and bicultural schools are thoroughly integrated - they blur the boundaries between curriculum subjects, between inside and outside the classroom, and between school and community. In considering these features alone, there are obvious differences in both teaching and learning approaches between Maori and Pakeha.

While it is widely accepted that Maori and Pacific Islanders stress and value group cooperation and cohesiveness with the subordination of the individual to group accomplishment and the difficulties that this cultural preference poses for those trying to discover hidden individual potential, I have been unable to uncover 'hard' research where such beliefs and values have been put to the test. One recent study I did unearth has caused me to think again about such beliefs (if the results are generalizable).



Townsend et al. (1991) investigated academic helpseeking by ethnic group and gender in intermediate school classrooms and its effects on achievement and classroom organization. In their study they were able to examine cooperative and individualistic learning structures in the classroom and the helpseeking preferences between Maori and Pakeha students. They found, amongst other things, that 'Expected differences between Maori and Pakeha students, based on the values of cooperation and competition were not found' (p.35). In fact, they did not differ in their preferred source of help and were least likely to engage in cooperative helpseeking with peers.

The researchers speculate, 'The lack of ethnic differences in the current study may also reflect weakened traditional values in urban Maori students (Thomas, 1975), an explanation consistent with the view that both urban Maori and Pakehas have a deficit in cooperative behaviours (McKessar and Thomas, 1978). Further examination of the degree to which school exercises a conformity function, and the degree to which traditional Maori values are weakened with urbanization, is warranted. This examination might best be undertaken as part of an evaluation of the long-term effects of Kura Kaupapa Maori and Kohanga Reo' (p.46).

And still more recently, a non-research example challenges strongly held Maori beliefs and values. In early May, a programme titled Aussie Haka screened on TV One. It presented a very positive picture of individual Maori who, remote from their whanau and without the support of kinfolk, had become 'high achievers' in an extraordinary range of occupations in Australia.

Alan Duff (Maori author of Once Were Warriors, a best-selling New Zealand novel) in his weekly Evening Post column (11 May 1992), chose to comment on it in Lesson to be Learned from Aussie Maoris. He said '... one of the consistent themes that came through was the sense of individualism, which the subjects either claimed or implied was not nourished in their native land among their Maori people' He went on to lash 'this whanau carry on' ... 'this whanau-before-anything outlook [which is] an insult to my expectations of life, and more my children's.'

He expressed the fervent hope that, in viewing the programme '... a whole heap of my people will be awakened to their own potential' and that '... if we can do it over there, as even more of a minority, what the hell have our wimpy leaders been doing not telling us what we can achieve back home? Or could it be that they don't really want us to realise what flowering we have in us?'

In the light of the lack of research evidence to guide us in this facet of our concern in nurturing New Zealand's gifted and talented minority students, I think we must accept that



the traditional ways are most appropriate. But perhaps things are changing here, too. Certainly, most of my younger Maori informants thought so.

It is tempting to rush to closure and to provide a list of 'what to do's' to ensure that whatever minority talent we discover is developed fully. But, I do not think we know enough at this stage to proceed confidently.

I agree wholeheartedly with Cathcart and Pou (1992) when they say: 'We are not about to suggest that Maori children should be denied either the opportunity or the encouragement to achieve to the highest possible level in skills valued by Pakeha culture. On the contrary!

We do suggest, however, that Maori children should have equal opportunity and encouragement to continue to achieve in skills valued by Maori culture, and that such achievement should be measured and rewarded by our education system in ways that acknowledge it as equivalent in status to achievement in skills valued by Pakeha culture' (p.8).

I stated earlier that I believed we should make every effort to ensure that our new national curriculum be made more relevant for minority cultures and that this could be done at the local school/community level taking full advantage of the flexibility I understand the revised document allows. then I think, as Foliaki (1992) has too, '... how can subjects such as mathematics, physics, chemistry, and computer studies be changed to be culturally appropriate?' (p.19). There's a challenge! These subjects are apparently not popular with Polynesian students and over the years very few Maori and Pacific Islanders have studied them at an advanced level they are viewed as distinctly 'un-Maori' (Fitzgerald, 1977). And the picture has not changed in recent years, quite obviously, when the Minister of Education reported that only one of 58 Maori secondary teachers graduated from the colleges of education in 1990 as a teacher of mathematics, and only one Of the 22 Pacific Island as a teacher of sciences (biology). teacher graduates, only two were mathematics teachers; none were science teachers. (Evening Post, March 13, 1991)

Cognisance must also be taken of the view expressed independently by two of my Maori informants, both very successful senior educationists, who told me that the identification and nurturance of gifted young Maori was not a prime objective for Maoridom. Reducing the levels of chronic Maori underachievement in the school system was to be accomplished first and every effort would be made to attain that goal as speedily as possible. But concomitantly they acknowledged that they would be striving to redefine what constituted achievement in education in Maori terms and to achieve biculturalism in the curriculum. In fact, all the Maori educators I interviewed saw Maori achievement in bicultural terms.



Another opinion expressed by one of the two informants mentioned above was that no special efforts needed to be made to identify and nurture gifted and talented Maori children. In his view all that was required was the provision a stimulating and encouraging environment so that '... those who have things 'expected' of them by their family, and with the support of the whanau, they'll perform - rise to the occasion - when the time is ripe. There's no need to force it ... it will happen all in good time'. This notion of talent 'surfacing' is, of course, not peculiar to Maori; many educators recommend such an approach to identification, but in the usual school context there is no nurturing whanau.

However, another of my informants, equally knowledgeable, disagreed with this view. In his opinion, while such an approach might be suitable for those from families with great mana and who were in the ariki (noble) line, it would do nothing for able young commoners. So again, we are left with an unresolved problem as to the appropriate action to take in finding and developing potential among young Maori.

Conclusion

In conclusion, what can be said of our knowledge and understanding of the identification and nurturance of gifted and talented minority youth in New Zealand? There are obviously some gaps in our knowledge which need to be closed and several misconceptions to be corrected. We are also faced with a number of untidy dilemmas which defy solution, given our present state of knowledge.

We could probably agree on the following:

- Discovering the gifted and talented among minority ethnic and cultural groups is not the only problem. The factors which make these children difficult to identify make their educational needs different from those of mainstream culture gifted and talented.
- * From the standpoint of ability to learn there are no important differences among children of different national or ethnic origins. None has a monopoly on exceptionality.
- * It is necessary to look in different ways to pick up the signs of giftedness and talent in children whose backgrounds differ from that of the majority of children. For the same reason that stereotypes about racial minorities, ethnic groups, and others must be combated, so must stereotypes about evidence of giftedness and talent.
- * The key to success of any educational programme is the teacher. Courses which train teachers for multicultural classes are a priority. But for those teachers already in the system it will be necessary to conduct inservice



training which is required to alter expectations related to identifying and nurturing talent among the culturally different, using new and appropriate teaching strategies, and using learning resources in the school and the community more effectively.

- * It will probably be necessary in nurturing the minority gifted to encourage varied activities for talent development (which are not currently part of our curricula), in unconventional settings (i.e., outside the school), involving nontraditional personnel (i.e., other than teachers).
- * We need to focus on diversity in our procedures for identifying minority gifted. To persist with traditional procedures, apart from being largely unsuccessful, also suggests that we believe the gifted to be a homogeneous group that demonstrate their potential according to one set of standards and in exactly the same way.
- * Within minority cultures and ethnic groups we must again focus on diversity to help avoid the indiscriminate application of stereotypes by diverting our attention to strengths and needs, rather than to weakness real or supposed.

In considering the gifted and talented amongst New Zealand's ethnic and cultural minorities we are dealing, in Alexinia Baldwin's term, with a 'minority's minority'. Probably with no other subpopulation are identification and nurturance more complex and seemingly inextricably interwoven with factors of environment, home circumstances, performance on tests and examinations, notions about what 'makes' giftedness, language, deviation from mainstream culture, ambiguous attitudes regarding the intellectual and academic competencies of minority students, and differences in the manifestations of cultural behaviours. The problem, difficult though it is, is not going to go away. If we, as predominantly mainstream culture educators, truly believe that it is the right of every child to have a high-quality education that matches individual abilities and needs, then we have no time to lose in correcting our chronic cultural myopia - tomorrow may already be too late.



REFERENCES

- Ashton-Warner, S. (1963). Teacher. London: Secker and Warburg.
- Baldwin, A.Y. (1984). Baldwin Identification Matrix 2 for the Identification of Gifted and Talented. New York:
 Trillium Press.
- Baldwin, A.Y. (1987). Undiscovered diamonds: the minority gifted child. Journal for the Education of the Gifted, 10, 4, 271-285.
- Bassett, I. (1983). Education for a Multicultural Society:
 Meaning and Myths. Paper presented to a seminar on
 Learning and Teaching in Multicultural Settings, Auckland
 Teachers' College.
- Benton, R.A. (1986). Here Today and Gone Tomorrow: Talking and Learning in New Zealand Classrooms. Paper presented at the 21st. Regional Seminar, SEAMEO Regional Language Centre, Singapore.
- Benton, R.A. (1987). How Fair is New Zealand Education?

 Part II. Fairness in Maori Education. Report to The
 Royal Commission on Social Policy. Wellington: NZCER.
- Braggett, E.J. (1992). Gifted and Talented Children and their Education. (in press).
- Cathcart, R. and Pou, N. (1992). The Gifted Child Who is Maori. Draft report of a workshop, NZAGC Auckland Branch Teachers' Conference (Personal correspondence).
- Chapman, J.W. (1984). The self-concept of Maori school pupils revisited: a critique of Ranby's study and some new data.

 New Zealand Journal of Educational Studies, 19, 1, 45-54.
- Clarke, J. (1987). Still another river to cross says Maori principal. Tu Tangata, 35, 27.
- Clay, M.M. (1985). Engaging with the school system: a study of interaction in new entrant classrooms. New Zealand Journal of Educational Studies, 20, 1, 20-38.
- Davis, G. and Rimm, S. (1985). Education of the Gifted and Talented. Englewood Cliffs, N.J.: Prentice Hall.
- Doidge, G. (1990). Maori children, Maori studies: a special giftedness. Apex, 4, 2, 36-39.
- Duff, A. (1990). Once Were Warriors. Auckland: Tandem Press.
- Eby, J.W. (1984). Gifted Behaviour Index. New York: D.O.K. Publishers.



- Ennis, J. (1987). Why do our schools fail the majority of Maori children? Tu Tangata, 36, 21-25.
- Findlay, J. (1991). Checklist for the Identification of Gifted Maori Children. (Cited in Cathcart and Pou).
- Fitzgerald, T.K. (1977). Education and Identity: A Study of the New Zealand Maori Graduate. Wellington: NZCER.
- Frasier, M.M. (1979). Rethinking the issues regarding the culturally disadvantaged gifted. *Exceptional Children*, 45, 538-542.
- Frasier, M.M. (1987). The identification of gifted black students: developing new perspectives. Journal for the Education of the Gifted, 10, 3, 155-180.
- Freeman, D.W. (1978). Teaching Children with Special Abilities in a Multicultural Society: A Select Annotated Bibliography for Teachers and Parents. Auckland: University of Auckland, Education Department.
- Gadd, B. (1981). Cited in P. Ramsay (1987). The education of so-called disadvantaged children: an essay on self criticism, in D.R. Mitchell and N.N. Singh (eds.), Exceptional Children in New Zealand. Palmerston North: Dunmore Press.
- Getzels, J.W. and Dillon, J.T. (1973). Giftedness and the education of the gifted, in R.M. Travers (ed.), Second Handbook on Research on Teaching. Chicago: Rand McNally and Co.
- Harker, R. (1985). Schooling and cultural reproduction, in J. Codd, R. Harker and R. Nash (eds.), Political Issues in New Zealand Education. Palmerston North: Dunmore Press.
- Havill, S.J. (1982). Developing Gifted Behaviour. Paper presented at the Second National Conference of the Education of Gifted and Talented Children, Massey University, Palmerston North.
- Hill, C.G.N. (1977). Gifted Is as Gifted Does. Address to NZAGC Annual General Meeting. Auckland: NZAGC.
- Hunkin, D. (1983). A Management Strategy for Multicultural Classrooms. Paper presented to a seminar on Learning and Teaching in Multicultural Settings, Auckland Teachers' College.
- Ioane, S.I. (1982). Cultural achiebunkerism in New Zealand schools. PPTA Journal, 2, 12-16.

- Ivala-Laufiso, E. (1992). Issues in Assessment for Pacific Island Students. Paper presented to the National Workshop on Professional Development and Educational Assessment. Stella Maris Conference Centre, Wellington.
- Jones, A. (1987). What really happens in the classroom. set, No.2, Item 7.
- Kawharu, I.H. (1965). Education and the Maori Community: Orakei. Wellington: NZCER (mimeo).
- Kerin, A.W. (1986). One to One Interactions in Junior Classrooms: A Comparison of Maori, Taha Maori, and European Teachers. Unpublished MA Thesis, University of Auckland.
- Kitano, M. and Kirby, D. (1986). Gifted Education: A Comprehensive View. Boston: Little, Brown.
- Leadley, F. (1983). Maori education in a secondary school. PPTA Journal, 2, 29-33.
- McAlpine, D.M. and Reid, N.A. (1988). Development of a Scale for Rating Characteristics of Gifted and Talented Students. Proposal to Advisory Committee: Students and Schools Programme, NZCER.
- McKessar, C.J. and Thomas, D.R. (1978). Verbal and nonverbal helpseeking among urban Maori and Pakeha children. New Zealand Journal of Educational Studies, 13, 1, 29-39.
- Metge, J. (1976). The Maoris of New Zealand. (Revised edition). London: Routledge and Kegan Paul.
- Metge, J. (1986). In and Out of Touch: Whakama in Cross Cultural Context. Wellington: Victoria University Press.
- Metge, J. (1990). Te Kohao O Te Ngira: Culture and Learning for a Multicultural Society. Wellington: Learning Media, Ministry of Education.
- Metge, J. and Kinloch, P. (1978). Talking Past Each Other. Wellington: Victoria University Press.
- Middleton, S. (1982). Multicultural education and teacher education. PPTA Journal, Term 2, 22-24.
- Mitchell, B.M. (1988). A strategy for the identification of the culturally different gifted/talented child. Roeper Review, 10,3,163-165.
- Mitchell, J.M. and Mitchell, H. (1988). Profile of Maori Pupils with High Marks in School Certificate English and Mathematics, Vol.1. Report to the Department of Eduration, Wellington.



- Penetito, W.T. (1984). Taha Maori and the core curriculum. Delta, 34, 35-43.
- Ramsay, P., Sneddon, D., Grenfell, J. and Ford, I. (1983).
 Successful and unsuccessful schools: a study in Southern
 Auckland. Australian and New Zealand Journal of
 Sociology, 19, 2, 272-304.
- Ranby, P. (1979). What do Maori children think of themselves? set, No.1, Item 7.
- Raven, J., Raven, J.C. and Court, J.H. (1991). Manual for the Raven's Progressive Matrices and Vocabulary Scales:
 General Overview. Oxford: Oxford Psychologists Press.
- Reid, N.A. (1983). Polynesian Conceptions of Giftedness.
 Paper presented at the Fifth World Conference on Gifted and Talented Children, Manila.
- Reid, N.A. (1989). Contemporary Polynesian conceptions of giftedness. Gifted Education International, 6, 1, 30-38.
- Reid, N.A. (1990). Identifying the Culturally Different Gifted in New Zealand. Apex, 3, 3, 3-10.
- Reid, N.A. and McAlpine, D.M. (1981). Giftedness: Some New Zealand Perspectives. Paper presented at the Fourth World Conference on Gifted and Talented Children, Montreal.
- Reid, N.A. and Gilmore, A. (1985). Standard Progressive Matrices New Zealand Standardization. Wellington: NZCER.
- Renwick, W.L. (1984). Picking up the Challenge. Keynote address to the Maori Education Development Conference, Turangawaewae Marae.
- Renwick, M. and Vize, J. (1990). Windows on Teacher Education, Phase 1: Initiation into Teacher Education. Wellington: NZCER.
- Renwick, M. and Vize, J. (1991). Windows on Teacher Education, Phase 2: The Second Year. Wellington: NZCER.
- Renzulli, J.S. and Hartman, R.K. (1971). Scale for rating behavioural characteristics of superior students. *Exceptional Children*, 38,3, 243-248.
- Renzulli, J.S. (1973). Talent potential in minority group students. Exceptional Children, 39, 437-444.
- Richardson, E. (1964). In the Early World. Wellington: NZCER.



- Ritchie, J. (1963). The Making of a Maori. Wellington: A.H. and A.W. Reed.
- St. George, A. (1983). Teacher expectations and perceptions of Polynesian and Pakeha pupils and their relationship to classroom behaviour and school environment. British Journal of Educational Psychology, 53, 48-59.
- Schwimmer, E. (1964). A sense of belonging. (Source unknown).
- Simon, J. (1986). Ideology in the schooling of Maori children. Delta Research Monograph, No.7, Massey University.
- Sisk, D.A. (1988). Children at risk: the identification of the gifted among the minority. Gifted Education International, 5, 3, 138-141.
- Smith, G.H. (1986). Taha Maori: a Pakeha privilege. Delta, 37, 11-23.
- Smith, G.H. (1990). Taha Maori: Pakeha capture, in J. Codd, R. Harker and R. Nash (eds.), *Political Issues in New Zealand Education* (Second edition). Palmerston North: Dunmore Press.
- Spoonley, P. (1982). Race relations, in P. Spoonley, D. Pearson and I. Shirley (eds.), New Zealand: Sociological Perspectives. Palmerston North: Dunmore Press.
- Sternberg, R. (1984). What should intelligence tests test: implications for the triarchic theory of intelligence for intelligence testing. Educational Researcher, 13, 1, 5-15.
- Tauroa, E. TeR. (1984). Race relations in New Zealand. Pacific Islands Monthly, 55, 11, 12-17.
- Thomas, D.R. (1975). Cooperation and competition among Polynesian and European children. *Child Development*, 46, 948-953.
- Townsend, A.R., Manley, M., and Tuck, B.F. (1991). Academic helpseeking in Intermediate-school classrooms: effects of achievement, ethnic group, sex and classroom organization. New Zealand Journal of Educational Studies, 26, 1, 35-47.
- Vasil, R. (1988), Biculturalism: Reconciling Antearoa with New Zealand. Wellington: Victoria University Press.
- Walford, D. (1979). Children with Special Abilities from Minority Cultures. Paper presented to the First National Conference on Gifted and Talented Children, North Shore Teachers' College, Auckland.



- Walker, R.J. (1973). Biculturism and education, in D.H. Bray and C.G.N. Hill (eds.), Polynesian and Pakeha in New Zealand Education, Vol.1. Auckland: Heinemann Educational Books.
- Walker, R.J. (1985). Cultural domination of taha Maori: the potential for radical transformation, in J. Codd, R. Harker and R. Nash (eds.), Political Issues in New Zealand Education. Palmerston North: Dunmore Press.
- Walker, R.J. (1990). Korero: politics and performance. New Zealand Listener, June 11, 98-99.
- Watson, J.E. (1967). Horizons of Unknown Power: Some Issues of Maori Schooling. Wellington: NZCER.
- Wills, N.W. (1981). Cross-cultural Sensitivity: A Study of Ethnocentrism in Student Teachers. Unpublished M. Soc. Sc. thesis, University of Waikato.

